CLAIMS

1. Process for the production of oils starting from a hydrocarbon-containing feedstock that has a sulfur content of less than 1000 ppm by weight, a nitrogen content of less than 200 ppm by weight, a metal content of less than 50 ppm by weight, whereby said process comprises the following successive stages:

(a) converting pretreatment of the feedstock, whereby said stage takes place at a temperature of 200-500°C, under a pressure of 5-25 MPa, with a volumetric flow rate of 0.1-5 h^{-1}, in the presence of hydrogen, and in the presence of a bifunctional catalyst that contains at least one noble metal of group VIII that is deposited on a non-zeolitic silica-alumina-based substrate that has a silica (SiO_2) content by mass that is more than 10% by weight and less than or equal to 80% by weight, whereby said catalyst has the following characteristics:

- a mean pore diameter, measured by mercury porosimetry, encompassed between 20 and 140 Å,
- a total pore volume, measured by mercury porosimetry, encompassed between 0.1 ml/g and 0.6 ml/g,
- a total pore volume, measured by nitrogen porosimetry, encompassed between 0.1 ml/g and 0.6 ml/g,
- a BET specific surface area encompassed between 100 and 500 m^2/g,
- a pore volume, measured by mercury porosimetry, encompassed in the pores with diameters of more than 140 Å, of less than 0.1 ml/g,
- a pore volume, measured by mercury porosimetry, encompassed in the pores with diameters of more than 160 Å, of less than 0.1 ml/g,
- a pore volume, measured by mercury porosimetry, encompassed in the pores with

diameters of more than 200 Å, of less than 0.1 ml/g,

- a pore volume, measured by mercury porosimetry, encompassed in the pores with diameters of more than 500 Å, of less than 0.01 ml/g,
- an X diffraction diagram that contains at least the main lines that are characteristic of at least one of the transition aluminas contained in the group that consists of the alpha, rho, chi, eta, gamma, kappa, theta and delta aluminas,
- a pore distribution, such that the ratio between volume V2, measured by mercury porosimetry, encompassed between D_{mean} - 30 Å and D_{mean} + 30 Å, to the total mercury volume is more than 0.6, that volume V3, measured by mercury porosimetry, encompassed in the pores with diameters of more than D_{mean} + 30 Å, is less than 0.1 ml/g, that volume V6, measured by mercury porosimetry, encompassed in the pores with diameters of more than D_{mean} + 15 Å, is less than 0.2 ml/g,

(b) catalytic dewaxing of at least a portion of the effluent that is obtained from stage a), carried out at a temperature of 200-500°C, under a pressure of 1-25 MPa, with an hourly volumetric flow rate of 0.05-50h^{-1}, in the presence of 50-2000 liters of hydrogen/liter of effluent that enters stage b and in the presence of a catalyst that comprises at least one hydro-dehydrogenating element and at least one molecular sieve.

2. Process according to claim 1 that uses a catalyst in which the proportion of the octahedral Al_{VI} determined by analysis of the NMR MAS spectra of the solid of ^{27}Al is greater than 50%.

3. Process according to one of the preceding claims, in which the noble metal of the pretreatment catalyst is platinum and/or palladium.

4. Process according to one of the preceding claims, in which the pretreatment catalyst is such that the packing density is greater than 0.85 g/cm^3.

5. Process according to one of the preceding claims, in which the entire effluent of converting pretreatment stage (a) is treated in dewaxing stage (b).

6. Process according to one of claims 1 to 5, in which the effluent that is obtained from stage (a) is distilled so as to separate the light gases and at least one residue that contains the compounds with a boiling point that is higher than at least 340°C, whereby said residue is subjected to stage (b).

7. Process according to one of the preceding claims, in which the effluent that is obtained from stage (b) is distilled so as to separate an oil that contains the compounds with a boiling point that is higher than at least 340°C.

8. Process according to claim 7, comprising an atmospheric distillation followed by a vacuum distillation of the atmospheric residue.

9. Process according to one of the preceding claims, in which the feedstock that is subjected to stage (a) previously underwent a hydrotreatment then optionally a separation of water, ammonia, and hydrogen sulfide.

10. Process according to one of the preceding claims, in which the catalyst of stage (b) is based on zeolite that is selected from the group that is formed by TON-structural-type zeolites (theta-1, ISI-1, ZSM-22, KZ-2, and NU-10), and the zeolites ZSM-48, ZBM-30, EU-2, EU-11, ferrierite, EU-1 and EU-13.

11. Process according to one of the preceding claims, in which the effluent that is obtained from stage (b) is subjected to a hydrofinishing stage before being distilled.

12. Process according to one of the preceding claims, in which the treated hydrocarbon-containing feedstock contains at least 20% by volume of compounds that boil above 340°C.

13. Process according to one of the preceding claims, in which the treated

hydrocarbon-containing feedstock is selected from the group that is formed by vacuum distillates that are obtained from the direct distillation of the crude, the vacuum distillates that are obtained from conversion units, the vacuum distillates that are obtained from units for aromatic compound extraction, the vacuum distillates that are obtained from desulfurization or hydroconversion of atmospheric residues and/or vacuum residues, deasphalted oils, hydrocracking residues, vacuum distillates that have undergone a hydrorefining stage, lubricating oil bases, polyalpha-olefins with a high pour point or any mixture of said feedstocks.

14. Process according to one of the preceding claims that use for a pretreatment catalyst a silica-alumina-based non-zeolitic substrate that has the following characteristics:

- a content by mass of silica (SiO_2) of more than 10% by weight and less than or equal to 80% by weight of silica (SiO_2),
- a mean pore diameter, measured by mercury porosimetry, encompassed between 20 and 140 Å,
- a total pore volume, measured by mercury porosimetry, encompassed between 0.1 ml/g and 0.6 ml/g,
- a total pore volume, measured by nitrogen porosimetry, encompassed between 0.1 ml/g and 0.6 ml/g,
- a BET specific surface area of between 150 and 500 m^2/g,
- a pore volume, measured by mercury porosimetry, encompassed in the pores with diameters of more than 140 Å, of less than 0.1 ml/g,
- a pore volume, measured by mercury porosimetry, encompassed in the pores with diameters of more than 160 Å, of less than 0.1 ml/g,
- a pore volume, measured by mercury porosimetry, encompassed in the pores with

diameters of more than 200 Å, of less than 0.1 ml/g,

- a pore volume, measured by mercury porosimetry, encompassed in the pores with diameters of more than 500 Å, of less than 0.01 ml/g,
- an X diffraction diagram that contains at least the main lines that are characteristic of at least one of the transition aluminas contained in the group that consists of the rho, chi, eta, gamma, kappa, theta and delta aluminas,
- a pore distribution, such that the ratio between volume V2, measured by mercury porosimetry, encompassed between D_{mean} - 30 Å and D_{mean} + 30 Å, to the total mercury volume is more than 0.6, that volume V3, measured by mercury porosimetry, encompassed in the pores with diameters of more than D_{mean} + 30 Å, is less than 0.1 ml/g, that volume V6, measured by mercury porosimetry, encompassed in the pores with diameters of more than D_{mean} + 15 Å, is less than 0.2 ml/g.

15. Process according to claim 14 that uses a catalyst substrate such that it comprises at least two silico-aluminum zones that have Si/Al ratios that are less than or greater than the overall Si/Al ratio that is determined by X fluorescence.

16. Process according to claim 14 that uses a catalyst substrate such that it comprises a single silico-aluminum zone that has an Si/Al ratio that is equal to the overall Si/Al ratio that is determined by X fluorescence and is less than 2.3.

17. Process according to one of the preceding claims that uses a catalyst substrate such that the packing density, after calcination, is higher than 0.65 g/cm^3.

18. Process according to one of the preceding claims that uses a catalyst substrate whose acidity that is measured by IR tracking of the thermodesorption of the pyridine is such that the B/L ratio is between 0.05 and 1.